Abstract

A satellite system includes a plurality of orbit slots having a first orbital and a second orbital slot. A first satellite occupies a first orbital slot and generates a first set of uniform beams. A second satellite located in a second orbital slot generates a second set of uniform beams. A tiling pattern on the face of the Earth has a plurality of cells, with each of the cells having a defined frequency for communication. The first set of beams and the second set of beams are generated according to parameters to avoid interference between them. The parameters may include satellite orbit separations, beam size, multiplicity of band reuse, and ground station received beamwidth.